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Edited by C. Alan Ford

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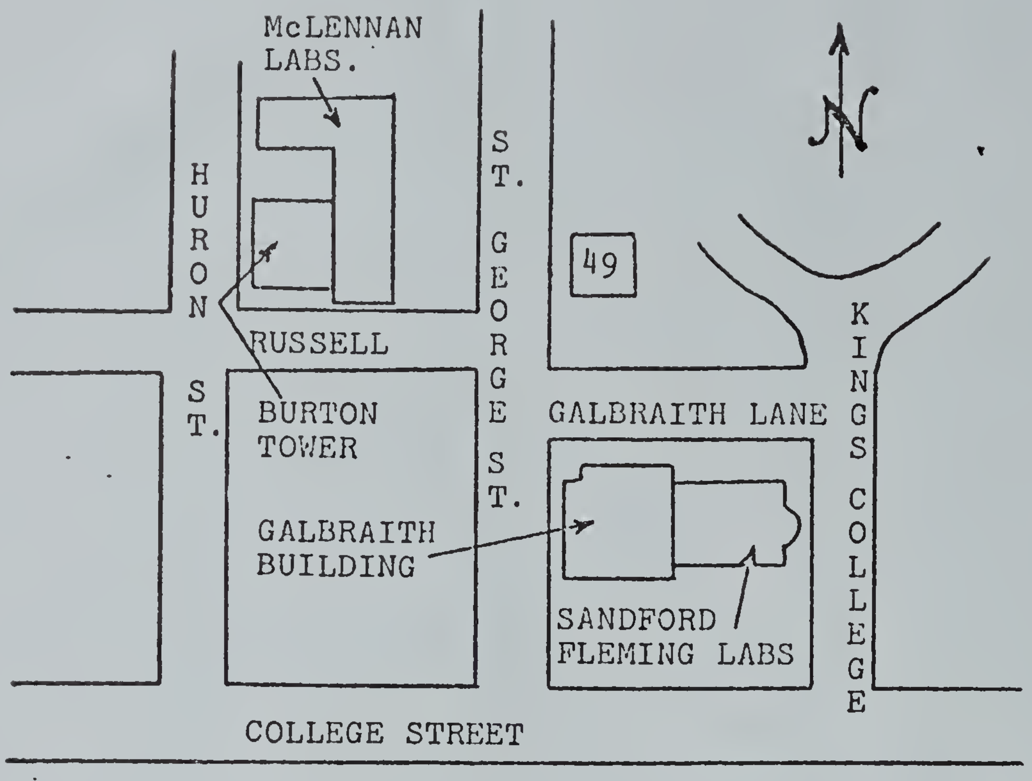
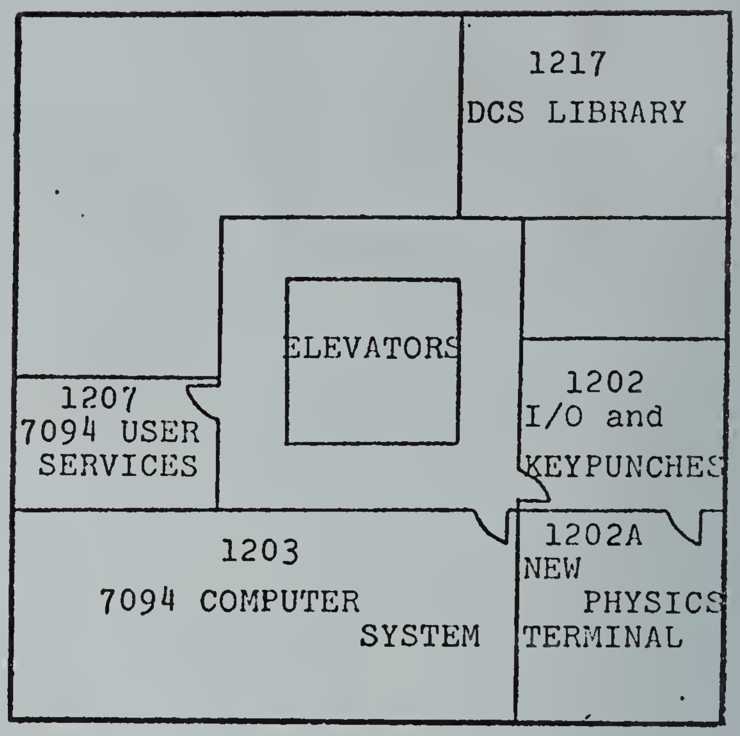
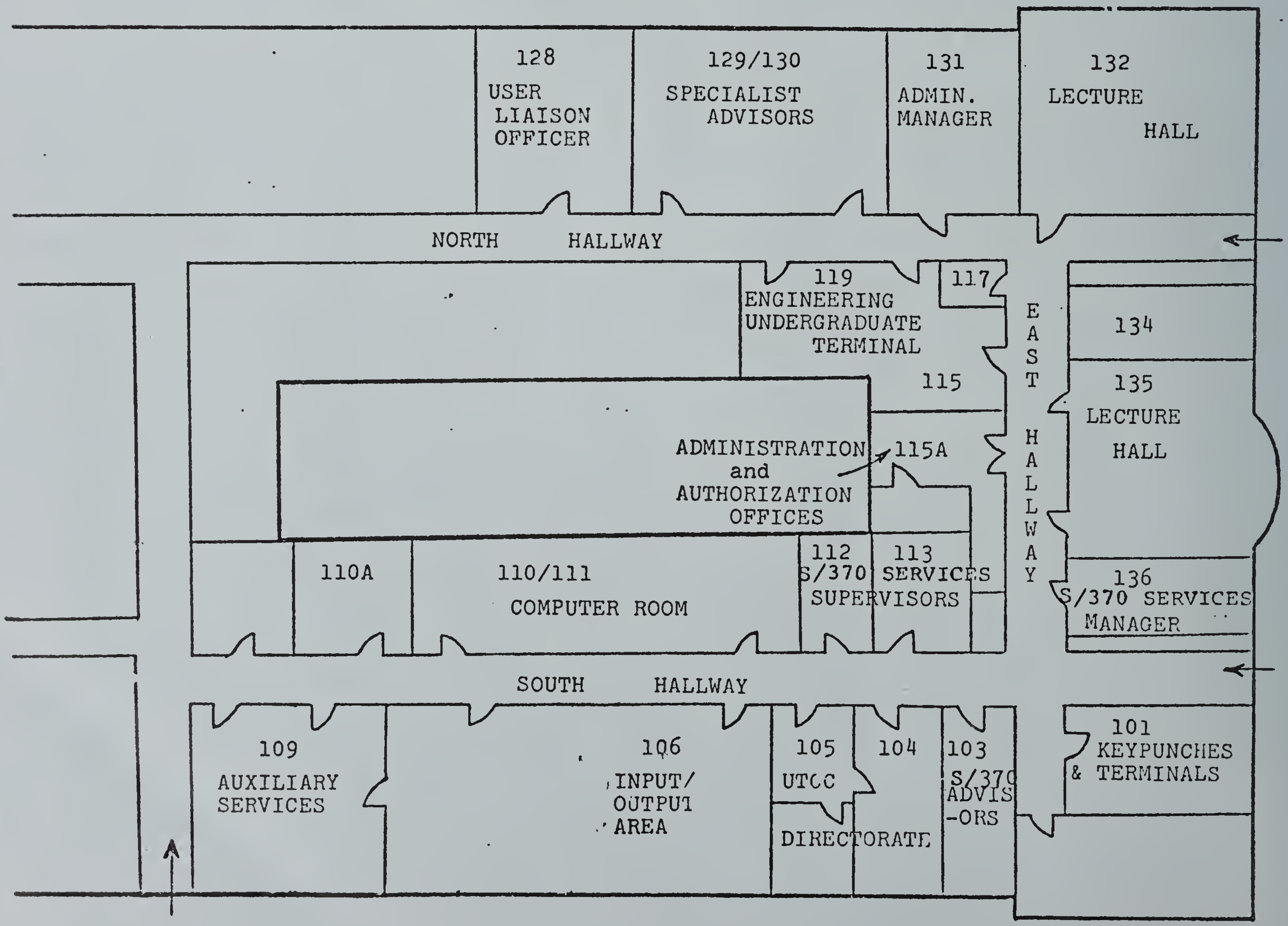




FLOOR PLAN: 12th FLOOR BURTON TOWER

FLOOR PLAN: UNIVERSITY OF TORONTO COMPUTER CENTRE
SANDFORD FLEMING LABORATORIES



SHARE XXXIX....A WINNER

C.A. Ford

The SHARE conference of August 1972 has come and gone. A very large attendance figure was achieved, thanks no doubt to the excellent agenda, the lure of affectionate old Toronto, and the stimulus of the new IBM product announcements. The local arrangements people, including our own Jerry Palter and Ann Herring, still seem to be up there on Cloud Nine.

We hope those of our users who attended were improved by the proceedings and hope the rest of you were not too dismayed by the dearth of UTCC staff during the event. Your official SHARE installation representative, C.A. Ford, would be pleased to hear any comments you may have about SHARE and its activities.

SHARE XL (Forty to all non-Romans) happens in Denver, Colorado next March.

NEW IBM HARDWARE AND SOFTWARE

C. A. Ford

The IBM Corporation has very recently announced extensions to the System/370 line of computers. New models called the 158 and 168 are offered as improvements on the 155 and 165. Extended versions of the Operating System are to be provided in order to exploit new features. The essential features of the new machines may be obtained through modifications to presently installed S/370s.

Technically, the most significant additional feature is an address translation device. This permits easy implementation of the concept called virtual storage. The machines can pretend to have sixteen megabytes of storage despite having a very much smaller real main memory. Programmers need no longer strive to construct their programs so as to fit within a limited memory region. Both the initial programming effort and maintenance of programs is greatly simplified.

The virtual storage also facilitates the technique of virtual machines. One S/370 of this type can pretend to be as many as fifteen different configurations, each operating under a completely autonomous operating system. For instance, a new test version of the operating system may be exercised experimentally concurrently with other regular production systems. No longer would the Centre's systems programmers need to be consigned to late-night hours, nor would night-owl users be dispossessed for "test-time".

These features are not likely to be installed for about two years, even if they are considered desirable. The system engineering and management planning for an upgrade to the virtual systems is not as finger-snapping easy as it may sound. Neither can the essential hardware items be bought with Monopoly money. Naturally, however, the Computer Centre management and technical staff are busy planning and analysing the possibilities.

IBM's advertising has stressed the possibilities of improved function , of economies to user-programmers and extra flexibility for the Centre. The latter item we can evaluate. But what of the first two claims? Will your research or teaching work be enhanced by the extended function? Will your savings in programming labour be significant? The overall worth of the new features will depend very strongly upon your needs. The Centre will welcome all possible discussion of these potentialities. Let us hear from you, formally or informally.

SUGGESTION BOX: The Users Speak

P. LoBello

Suggestion: To avoid the continuing problem with publication of incorrect JCL in SSB's I suggest that as a rule it is better to create a catalogued procedure. Allow exceptions only when absolutely necessary. There would be two advantages: errors could be rectified without having to create new documentation; mnemonic names for procedures would be easier than memorizing several JCL statements. A general procedure using symbolic parameters could be used.

Reply: True...the literature containing JCL is too often in error. Your suggestion is the best of several ideas we have considered and that is how we will be doing it. Where lengthy JCL must be reprinted we are now using CRJE printouts of it rather than typists output. We plan to clean up errors in publications quickly and to maintain much higher standards.

Suggestion: Perhaps it would be better if tapes could again be submitted with the job, using the jobname for external identification. Yesterday I put my tape in the foreign tape library as required and received a number to use. I ran two jobs and was then told my number belonged to some one else, received a new number and requested that my tape be put in the proper slot. I resubmitted my job and waited five hours during which the job failed. No one changed the external label on my tape. Class B is the only class charged for setup and it is the worst value. Jobs the size of Class A (same time, lines, core limits) get service as bad as Class C.

Reply: Our sincere apologies. The operator caught the first error and then compounded it by making another. However, on experience, this kind of error is less frequent and trouble less serious with the "foreign-tape" system than with "transient" tape handling.

Turnaround statistics confirm that Class A jobs get better service than in Class B or C. And Class B jobs do fare substantially better than Class C throughout all priorities. We are making efforts to balance the turnaround of all classes.

Suggestion: Please staple job cancellation forms to print outs again. The box is too crowded making it hard to find one's own.

Reply: There is a modification to HASP coming soon which will allow the operator to append comments directly to the cancel command explaining job cancellation reasons. This will eliminate the need for job cancellation forms and the associated filing problems.

Suggestion: Implement some form of $PRINTOFF for all processors (e.g. ASMG for PRINT OFF, WATFIV for $PRINTOFF). ALGOL has neither of these and it is not necessary to have a complete source listing when trying to debug a small segment of a program.

Reply: All processors on HSJS except SIMON/SAP have a feature to suppress source listing. In ALGOLW the feature can be used with the $NOLIST parameter. Features for all these processors will be documented in UTCC publications available shortly.

JULY AT UTCC

C. A. Ford

Your editor has been collecting and reporting job volume statistics since 1967. From the files comes the table printed below, showing what has happened to the July monthly production statistics July after July since then.

Over all types of work, the Centre has increased its output by 577% since 1967. Aside from July 1969, when conversion to the HASP system and a reduction in support for the 7094 II took a toll, the overall growth rate has been over 60% per annum. The short free highspeed stream of jobs, originally supplied through 7094 PUFFT and later by a number of S/3X0 processors, has roughly doubled itself annually.

Increased summer course work and greater utility to the general user account for the growth of the high speed stream. The greater economy and turnaround of the S/370 have encouraged a 61% 1971/1972 growth of general work. The Consortium scheme has also boosted 7094 work 37%, and that in the realm of rather large jobs.

Next July, 100,000 plus?

UTCC JULY JOB VOLUMES ... 1967 TO 1972

	1967	1968	1969	1970	1971	1972	TOTAL
STUDENT/DEBUG JOBS	0	2094	7249	12748	27877	44988	94956
7094 II JOBS	10800	15853	5351	2304	717	983	36008
S/3X0 GENERAL PURPOSE JOBS	0	43	3700	12780	16601	27114	60238
TOTAL NUMBER OF JOBS	10800	17990	16300	27832	45195	73085	191202
PERCENTAGE ANNUAL GROWTH		67	-9	71	62	62	577

COMMENTATIONES MATHEMATICAE UNIVERSITATIS CAROLINAE

C. A. Ford

The Computer Centre has received a copy of the journal named, published in Prague, Czechoslovakia. It has been forwarded to the Library of the Department of Computer Science for retention. The nature of the journal and its availability is described in the following excerpts from its inside front cover.

"Commentationes Mathematicae Universitatis Carolinae (shortly CMUC) is published quarterly by the Mathematical Institute of the Charles University, Prague. It is devoted to modern branches of mathematics and their applications.

Contributions are accepted written in English, French, German or Russian. Also preliminary communications are accepted which contain the results of papers received to be printed in some special journal.

CMUC being not for sale, it is sent to all scientific institutes or corporations with whom the Mathematical Institute has agreed on mutual exchange of journals or other publications (preprints, technical or seminary reports, doctoral theses, lecture notes, books), published in English, French, German, Italian, Spanish or in any Slav language.

Exchange offers should contain exclusively mathematical publications, dealing with any mathematical subjects, their applications in the science and engineering and mathematics didactics."

PERSONNEL CHANGES

J. Schick

At the end of August the Computer Centre loses the services of Josie Troccoli, keypunch operator in S/370 Services, and Holly Taylor, Programmer in Interactive Systems.

Josie has worked for the Centre for two years and is leaving to return to Italy. Both staff and users will miss her pleasant and cooperative nature. Holly is leaving to move out West. We wish them both the best of luck.

DATA PROCESSING EDUCATION STANDARDS, AN IMMINENT REALITY?

J. Walton

The office of the Ontario Ministry of Colleges and Universities which administers the licensing of private trade schools relies heavily in most sectors on standards established by Consultative Committees drawn from recognized professional or industrial associations. In the Data Processing field, no single body can fulfill this function. Therefore, at the beginning of this year, a Steering Committee was formed to address the problem.

The Steering Committee includes members of the Data Processing Management Association, the Canadian Information Processing Society, and representatives from private trade schools, Community Colleges of Applied Arts and Technology, and the Ministry of Colleges and Universities. Its goals are to establish advisory standards for both private trade schools and Community Colleges.

To date, three Working Committees have been formed to establish job definitions and minimum educational course content and objectives for the positions of Data Entry (Keypunch) Operator, Computer Operator, and Coder/Programmer. Dave McNaughton, UTCC's S/370 Manager, serves on the Computer Operator committee, and Joyce Walton, UTCC's 7094 Manager, chairs the Coder/Programmer committee.

The Data Entry monograph is in final editing stages. December is the target date for all three reports.

UTCC TO OPEN INFORMATION OFFICE

W. E. Greene

The UTCC Liaison Office will open an Information Centre on September 1st, which will be temporarily located in Room 128. The Information Office will be open and staffed during the full hours of operation of UTCC (which includes evenings and weekends). The Information Office will give University of Toronto users a single place to go to purchase manuals, get orientation or advice on how to get started and also a place to call whenever they are not sure which of the many technical groups to talk to. Telephone inquiries will be handled on two new extensions, 928-4990 and 928-4991

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

Bartee, T. C. Digital computer fundamentals. 3d ed. New York, McGraw-Hill, 1972.

Canadian Institute of Chartered Accountants. Study group on Computer Control and Audit Guidelines. Computer control guidelines. Toronto, 1970.

Freedman, M.D. Principles of digital computer operation. New York, Wiley, 1972.

Freiberger, W. and U. Grenander. A short course in computational probability and statistics. New York, Springer-Verlag, 1971.

Informatik-Seminar, Technischen Hochschule Wien, Feb. 1971. Hochschule Wien, Feb. 1971. Informatik: aspekte und studienmodelle. Wien, Springer-Verlag.

Martin, J. T. Introduction to teleprocessing. Englewood Cliffs, N. J., Prentice-Hall, 1972.

Maurer, H.A. and Williams, M.R. A collection of programming problems and techniques. Englewood Cliffs, N.J., Prentice-Hall, 1972.

Peterson, W.W. and Weldon, E.J., Jr. 2d. ed. Error correcting codes. Cambridge, Mass., M.I.T. Press, 1972.

Roberts, S.M. and Shipman, J.S. Two-point boundary value problems: shooting methods. New York, American Elsevier, 1972.

Stone, H. S. Introduction to computer organization and data structures. New York, McGraw-Hill, 1972.

Symposium in Applied Mathematics, New York City, Mar.1970. ed. by G. Birkhoff and M. Hall, Jr. Computers in algebra and number theory. Providence, R.I., American Mathematical Society, 1971.

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SYSTEM/370 APPLICATION SOFTWARE SUPPORT

W. Hayes
L. Prepas

Optimization Methods

Continuous System Modeling Program (CSMP360)
Version 1.3 of this package is now available.

Golden Section Search Routine (GOLDEN)
Fibonacci Search Routine (FIBON)
Preparation of these routines is underway.

Numerical Methods

Argonne Special Functions

As part of a continuing certification program undertaken in cooperation with the Argonne National Laboratories and many North American and European test sites, the University of Toronto has received and certified the following three (3) special function subprograms:

--The exponential integral

--The complete elliptic integrals K and E

These subprograms will be available in the near future.

Statistical Methods

Biomedical Computer Programs (BMD)

Updates for BMD and BMDX series statistical programs have been received and are undergoing testing. Replacement for current versions will be made following evaluation of test results.

Optical Mark Read (OMR) Facility

S. Yagi

Many users may be unaware that UTCC currently has installed on the IBM 2501 Card Reader located at the Engineering Undergraduate Terminal in the Sandford Fleming Bldg., hardware modificationsy which allow the reading of optical mark cards directly into the S/370. These OMR cards may even be intermixed with normal punched cards. At the present time this facility is being used only in conjunction with the special-format WATFIV OMR cards provided for use with the WATFIV student language processor at the EUT. However, if a demand develops, our OMR services could be expanded to more general applications.

A standard OMR card for the 2501 contains 40 OMR columns, each with twelve "bubbles". Such a card could be used for a variety of applications, such as the coding of opinion surveys or the field preparation of experimental data. The bubbles may be filled in with an ordinary lead pencil.

If you have an application for which the above described OMR facility might be useful, the User Services Group would be very interested in discussing the possibilities with you. If demand is adequate, consideration will also being given to development of some standardized utility programs to assist OMR users. For more information on this facility please contact Stan Yagi, S/370 User Services Supervisor, Rm. 112, Sandford Fleming Bldg., (928-7331).

PROGRAM ADVISORS

S. Yagi

System/370 User Services is presently looking for student programming advisors to assist the users of the General Purpose Job Stream during the 1972/73 academic year. Applications will be considered from both graduates and undergraduates. We are looking for people with a genuine interest in helping users while learning about our system.

Applicants should have a good knowledge of FORTRAN, Job Control Language, and a third language and be available to work between 9 A.M. and 5 P.M. on a part-time basis. The pay will range from $3.50 to $5.00 per hour and will be determined on the basis of the advisor's knowledge and experience.

Application forms are available in the System/370 Advising Office, Room 103 Sandford Fleming Building, telephone 928-8599, or may be obtained from the receptionist in Room 130, telephone 928-5270. All applications received by September 15, 1972 will be considered.

NEW CHARGING SCHEME FOR PERIPHERAL DEVICE SERVICES

C. A. Ford

On September 1 a new schedule of charges comes into effect for disk, tape and printer device service. This replaces the crude system of charging class B jobs a flat amount of four dollars (at PR=6). The new scheme charges jobs one dollar for each tape setup, two for each printer form specified, and three dollars for each disk. This is independent of class but subject to the usual service factors of 2.0 for PR=8 and 0.6 for PR=4.

The user community, through the agency of the Computer User's Committee, has reported that this more fair and logical system seems widely acceptable, despite the fact that more fairness to class B users shows up as new costs to others.

The Computer Centre, in conjunction with the Users Committee, has planned these prices carefully so as to minimize the risk of extracting more in job charges from the users, on aggregate, that it has been. This is not a device for increasing the revenue of the Centre.

Users have been provided during August with end-of-job pages showing the new charges. Where these are significant, a review of the JCL structure may help achieve economy. See the System/370 Users' Service staff for advice.

NEW DISK DRIVES WILL REDUCE JOB COSTS

C.A. Ford

Four new IBM disk drives of the model 3330 are being installed on the System/370-165. More of these units may be added in the future. These will, both now and in the future, cause changes in the counting of I/O activity. This in turn affects the quantity ERT and therefore the core usage cost of a user's job. The effect will be favourable to the user.

The first 3330 drives will be devoted to system functions only. However, even here the users I/O count may be affected favourably. A more dramatic reduction should accompany any later complete replacement of 2314 spindles with the 3330 devices.

The price of core usage, per KB-minute, will not be changed until the effects of the first installation can be evaluated. A price change may need to be adopted when more 3330s go into service. Meanwhile, users may expect an improvement in throughput and the reduction in core usage costs.

The new equipment, complete with new block multiplexor 2880 channels and a 3830 controller, were planned to contribute to the gradual extension of function and efficiency of the S/370. The 2314 disk drive unit replaced by the 3330s will go into service at once with the Interactive System/360-65, increasing its operational capacity.

SYSTEM/370 CREDIT REQUESTS

C.A. Ford

The credit request activity level rose from the low of twenty-seven in June to a more typical figure of fifty-one in July. We prefer the June performance! However, there were quite a number, all solved or resolved, arising from the change to Release 21 of the Operating System. These should not be recurrent. Thirty-two were from software causes with only nineteen from equipment or human factors.

SYSTEM STATUS BULLETINS ISSUED

R. Cox

40:72 Implementation of Release 21.0

41:72:1 Hours of Service - Civic Holiday
2 SHARE XXXIX
3 S/370-165 Shutdown August 12-13
4 Erratum - SSB 40:72

42:72 Statistical Package for the Social Sciences

43:72:1 IBM 3330 Disk Drives
2 Revised SSB Mailing List
3 SPITBOL Problem

44:72 New Procedures for Paper Tape Users

45:72 Online Allocation for User Datasets

46:72 New Utility Program - JCLEDIT

47:72 Datatext - Release 3

SYSTEM RELIABILITY

S. Goldfarb

Interactive online computer systems require high reliability, with an absolute minimum of system failures during scheduled time, to be acceptable. The Computer Centre Interactive Terminal System S/360-65 is providing service with well over 100 hours meantime between failures and with excellent total uptime.

The following tables summarize the time lost out of scheduled hours of production for the period July 1 through July 31, 1972. The total number of scheduled hours of operation during this period was 494 (including the July 3 holiday). Table 1 shows the time lost due to late starts (IPL's); Table 2 shows the time lost due to system failures for each of the systems. Four unscheduled IPL's were required as a result of the failures. The uptime for each of APL, ATS, and CPS was 97.63%, 97.66%, and 97.68% respectively. In addition to the scheduled hours of operation, APL, ATS and CPS were each available during approximately 116 hours of unscheduled weekend time.

DATE	TIME LOST (mins.)			REASON
	APL	ATS	CPS	
Sat. July 15	291	292	293	Overnight power failure induced several hardware errors (hardware)
Fri. July 21	5	-	-	Tape drive problems delayed maintenance procedures (hardware)
Sat. July 29	178	181	183	Overnight power failure induced hardware errors (hardware)
Totals	474	473	476	

Table 1. Time Lost at IPL

DATE	DOWN TIME (mins.)			REASON
	APL	ATS	CPS	
Wed. July 5		4		Improper IBM Correction to OS (software)
Wed. July 12		15		Communication line problems (hardware)
Thurs. July 13	32			Emergency storage compression measures to relieve APL disk space shortage
Thurs. July 13	11	12	14	*Error on Memorex 1270 (hardware)
Tues. July 25	161	163	167	*Power surge induced hardware errors (hardware)
Thurs. July 27	11	14	15	*Error on system residence disk (hardware)
Thurs. July 27	12	13	15	*Undetermined
Totals	227	221	211	*IPL required

Table 2. System Failures

MEMOREX 1270 CONTROL UNIT

S. Goldfarb

The data communication lines have now all been transferred from the IBM 2703 Control Unit to a Memorex 1270 Control Unit. The Interactive Systems Group is now experimenting with an arrangement for supporting higher speed devices.

APL-OS FILE CONVERSION

S. Goldfarb

Facilities for converting APL files to OS and vice-versa are now available. Details on the procedure for file conversion may be found in Workspace 1 NEWS.

Type:

```
)LOAD 1 NEWS
PRINT 7
```

APL FILE PRINTING FACILITY

S. Goldfarb

A facility for printing APL files on the high speed printer is now available. Description of the FILE PRINT feature may be found in the document "APL PLUS File Subsystem Instruction Manual" (Appendix E), available from the Computer Centre (928-8703) and in Workspace 1 FILEPRINT.

Type:

```
)LOAD 1 FILEPRINT
DESCRIBE
```

GENERAL NEWS

J. R. McBride

a) Staff Changes

We regret to announce that Miss Vanessa Jones, CRF librarian will be leaving CRF on the 25th of August 1972. Miss Jones is leaving to get married and will be moving out of Toronto.

We are sorry to lose Vanessa but wish her well in her married life.

We are pleased to announce that Bernie Leger has been promoted to Assistant Operations Supervisor and will report to Krishna Patnaik, Head of Digital Operations.

Mr. Leger will take over the librarian duties of Vanessa Jones (most of which are now computerized by the Automatic Tape/Disk/Catalog system) and will be responsible for the day-to-day operations of the S/360-44.

b) SHARE XXXIX Activities

University of Toronto actively participated in the SHARE XXXIX Conference held at the Royal York Hotel, August 7th through 11th, 1972. An estimated 1800 delegates attended the conference from all over North and South America, Europe and Japan.

The Computer Research Facility and the University of Toronto Computer Centre made a joint presentation of a slide-film show on Tuesday and Wednesday, August 8th and 9th. The presentation was very successful and was attended by about 50 people.

On Thursday August 10th, CRF and UTCC sponsored two tours of the University's main computer facilities.

During the tours CRF gave a special graphics demonstration for the SHARE Graphics Project.

About 70 people attended the two tours.

c) Labour Day Holiday

The CRF lab and offices will be closed on Monday September 4th, 1972 for the Labour Day Holiday.

The CRF lab will close at 8:00 p.m. on Friday, September 1st, 1972 and will reopen at 9:00 a.m. on Tuesday September 5th, 1972.

d) End-of-Summer Hours

The CRF lab summer hours will end on Friday, September 1st, 1972.

On Tuesday, September 5th, 1972 the CRF lab will resume its normal hours of - Monday - Friday 9:00 a.m. to 12:00 Midnight

- Saturday, Sunday and Holidays - closed.

e) CRF's Centrefold Picture!

A photograph taken off the CRF 2250 Video display by a Polaroid-Land camera was reproduced in a centrefold display in the July issue of "Scientific American". Not as exciting as some centrefold pictures, but it's a start!

NEW SOFTWARE SYSTEMS

a) Tape/Disk/Catalog Rental System

The automatic Tape/Disk/Catalog Rental System which was announced in IB13:72 and Newsletter #90 was successfully put into production on Monday, July 31st, 1972.

This system allows the user to rent tapes, disks or disk space by simply running a short Class E job.

Account holders will now receive every month an itemized list of all rentals billed to their account. The first of these was mailed to all Account holders on Tuesday August 8th, 1972. This is in addition to the regular weekly billing.

Code holders may obtain listings of their own personal rentals on request.

Full details of the system and how to use it are contained in "CRF Tape/Disk/Catalog Rental System", form number CRF412. Copies of this document are available in the CRF office.

b) CRF Disk and Catalog Maintenance System

A new Disk and Catalog Maintenance system was introduced at the same time as the automatic rental system.

The new maintenance system does three things:

i) deletes all unauthorized data sets from the rental packs,

ii) deletes all unauthorized catalog entries from the system catalogs,

iii) upgrades information on the space rented on rental packs whenever the user has increased or decreased his data set size.

The data set scratch program will be run on Tuesday and Friday evenings, following the backup of rental packs.

Users encountering any difficulty with either system are requested to contact Dennis Smith in room SF2740.

c) Automatic Backup System

CRF has introduced its new automatic backup system for all CRF disk packs. This system automatically keeps track of all packs and assigns backup tapes on a father-grandfather basis.

The introduction of this system coincided with the completion of the changeover to new packs.

d) New Calcomp Routines

A new version of the CALCMP routines is now in use. These new routines should be completely compatible with all existing programs and JCL.

The only changes are an increased flexibility in selecting frames to be plotted on the 836 plotter or on the IBM 2250, and the introduction of direct plotting from a FORTRAN program onto the 835 plotter.

A new version of the "CALCMP Users Guide" can be obtained from the CRF Office or by using the following JCL:

```
// EXEC LDOC,NAME=CALCMP
```

Users experiencing problems should contact Dennis Smith, Room SF2740.

VISITORS TO THE LAB

The following people visited the lab between July 6th and August 17th, 1972.

Dr. Joanna Perlmuter (Toronto), Mr. C. Holliday (National Aeronautical Establishment, NRC, Ottawa), and Mr. and Mrs. A. Toledo (Toronto), Mr. Dennis Condos (IBM Canada Ltd.), Professor A. I. Johnson (Dean of Engineering Science, University of Western Ontario), Mr. R. Lundvall (Digital Equipment of Canada), Mr. R. Baker and Mr. Ron Breckner (Cambridge Memories Inc.), Professor Harry J. Saul (SUNY/AB), Professor Steve Worwna (Cornell University), Professor Thomas R. Wilens (University of Michigan), Mr. Eric Cromwell (New York), Miss J. Perry, Mr. D. M. Anderson, Miss Sylvia Holland, Mr. Carl Kemp-Jackson, Miss Kerrie-Lee Clarke, Mr. R. I. Christie, Mr. Earl Hough, (University of Toronto Personnel Department), Miss Claudette Couture (Montreal), and Mr. Orest Kucharsky (Montreal).

CRF PUBLICATIONS

The following publications have been issued since Newsletter #90:

New

"CRF Tape/Disk/Catalog Rental System", form CRF412

"Borrowing Rules for CRF IBM Manual Reference Library", form CRF627.

Revised

"CALCMP Users' Guide", Form CRF1010.

Copies of these and other CRF publications are available from Miss Joyce King, Room SF2740, Sandford Fleming Labs. or by telephoning 928-6326.

UTCC DIRECTORY

	ROOM	PHONE 928-
DIRECTOR		
John C. Wilson	SF105	6496
ASSISTANT DIRECTOR		
C. Alan Ford	SF105	2991
USER LIAISON OFFICER		
Bill Greene	SF128	2694
ADMINISTRATION MANAGER		
Jerry Palter	SF131	8948
AUTHORIZATION CLERKS		
Nancy Pocock (S/370 + 7094)	SF115A	8702
Susan Sim (Interactive)	49 St. Geo.	8703
S/370 SERVICES		
MANAGER		
Dave McNaughton	SF136	6281
INPUT/OUTPUT SUPERVISOR		
Roy Finlayson	SF112	7092
USER SERVICES SUPERVISOR		
Stan Yagi	SF112	7331
PROGRAM ADVISORS	SF103	8599
INTERACTIVE TERMINAL SYSTEMS		
MANAGER		
Sam Goldfarb	49 St.Geo.	3787
7094 SERVICES		
MANAGER		
Joyce Walton	BT1207	7094
DEVELOPMENT MANAGER		
Alan Wickens	49 St.Geo.	6135

JOB STATUS QUERIES:	
SYSTEM/370	7373
7094	7094
Auxiliary Services	6465
INTERACTIVE TERMINAL SYSTEMS:	
System Status	6234
APL	7200
ATS	7100
CPS	6200
CONVERSATIONAL REMOTE JOB ENTRY (CRJE)	
2741	7233, 7381, 7386
TTY	7445

UTCC COMPUTER EQUIPMENT

(a) SYSTEM/370 MODEL 165

- located in SF 106/110/111
- provides General Purpose Job Stream and High Speed Job Stream services
- 2048K bytes of core
- 16 disk drives
- 1 drum
- 6 magnetic tape drives (4 9-track and 2 7-track)
- 6 display consoles
- 5 printers
- 4 card readers
- 2 card punches
- 6 remote terminals
- 1 paper tape reader

- OS/MVT with HASP and CRJE

(b) SYSTEM/360 MODEL 65

- located in Room 333 McLennan Physical Laboratories
- provides Interactive Systems Service
- 1536K bytes of core
- 8 disk drives
- 2 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 85 2741 typewriter terminals

- OS/MVT with APL, ATS, and CPS

(c) 7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

UTCC AUXILIARY EQUIPMENT

- located in SF Room 109
- System/360 Model 20 for unit record services
- CALCOMP plotter (11" and 30")
- card sorter
- decollator
- 519 reproducing punch

UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA.

SERIALS DEPARTMENT
UNIVERSITY OF TORONTO LIBRARY
UNIVERSITY OF TORONTO (2PRM)

September 29, 1972.

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